

IN THE CLAIMS:

Substitute the following claims for the pending claims having the same numbers.

1-10. (canceled)

11. (previously presented) A method of providing electrical power to multiple power consuming devices, the method comprising the steps of:

interconnecting each of the power consuming devices to a fiber optic line, so that each of the power consuming devices is selectable for operation thereof by transmitting one of multiple optical wavelength bands through the fiber optic line, and wherein each of the transmitted optical wavelength bands causes a respective at least one of the power consuming devices to be selected; and

transmitting various of the optical wavelength bands through the fiber optic line, thereby supplying electrical power to corresponding selected ones of the power consuming devices,

the transmitting step further comprising simultaneously transmitting multiple ones of the optical wavelength bands through the fiber optic line, thereby selecting corresponding multiple ones of the power consuming devices for operation thereof,

the multiple optical wavelength bands being transmitted through the fiber optic line by interconnecting a first optical coupler to the fiber optic line, the first optical coupler

receiving separate optical wavelength bands from multiple tunable filters.

12. (original) The method according to Claim 11, wherein each of the tunable filters is interconnected between the first optical coupler and a second optical coupler, each of the tunable filters receiving a relatively broad optical wavelength band from the second optical coupler.

13. (previously presented) A method of providing electrical power to multiple power consuming devices, the method comprising the steps of:

interconnecting each of the power consuming devices to a fiber optic line, so that each of the power consuming devices is selectable for operation thereof by transmitting one of multiple optical wavelength bands through the fiber optic line, and wherein each of the transmitted optical wavelength bands causes a respective at least one of the power consuming devices to be selected; and

transmitting various of the optical wavelength bands through the fiber optic line, thereby supplying electrical power to corresponding selected ones of the power consuming devices,

the transmitting step further comprising simultaneously transmitting multiple ones of the optical wavelength bands through the fiber optic line, thereby selecting corresponding multiple ones of the power consuming devices for operation thereof,

the multiple optical wavelength bands being transmitted through the fiber optic line by interconnecting an optical coupler to the fiber optic line, the optical coupler receiving separate optical wavelength bands from respective multiple tunable lasers.

14-26. (canceled)

27. (previously presented) An electrical power distribution system, comprising:

 a fiber optic line;

 multiple power consuming devices;

 multiple control modules interconnected between the fiber optic line and the power consuming devices, each of the control modules being interconnected between the fiber optic line and one of the power consuming devices, and each of the control modules being operative to select the respective power consuming device for supplying electrical power thereto in response to one of multiple optical wavelength bands transmitted through the fiber optic line, each of the optical wavelength bands causing one of the control modules to select the respective power consuming device for supplying electrical power thereto; and

 multiple tunable filters and a first optical coupler interconnected to the fiber optic line, the first optical coupler receiving separate optical wavelength bands from the multiple tunable filters.

28. (original) The system according to Claim 27, wherein each of the tunable filters is interconnected between the first optical coupler and a second optical coupler, each of the tunable filters receiving a relatively broad optical wavelength band from the second optical coupler.

29. (canceled)

30. (previously presented) An electrical power distribution system, comprising:

a fiber optic line;

multiple power consuming devices;

multiple control modules interconnected between the fiber optic line and the power consuming devices, each of the control modules being interconnected between the fiber optic line and one of the power consuming devices, and each of the control modules being operative to select the respective power consuming device for supplying electrical power thereto in response to one of multiple optical wavelength bands transmitted through the fiber optic line, each of the optical wavelength bands causing one of the control modules to select the respective power consuming device for supplying electrical power thereto, the multiple optical wavelength bands being transmitted simultaneously through the fiber optic line; and

an optical coupler interconnected to the fiber optic line, the optical coupler receiving separate optical wavelength bands from multiple lasers, at least one of the multiple lasers being a tunable laser.

31-38. (canceled)

39. (previously presented) An electrical power distribution system, comprising:

a fiber optic line;

multiple power consuming devices; and

multiple control modules interconnected between the fiber optic line and the power consuming devices, each of the control modules being interconnected between the fiber optic line and one of the power consuming devices, and each of the control modules being operative to select the respective power consuming device for supplying electrical power thereto in response to one of multiple optical wavelength bands transmitted through the fiber optic line, each of the optical wavelength bands causing one of the control modules to select the respective power consuming device for supplying electrical power thereto,

the power consuming devices being data storage devices.

40. (previously presented) An electrical power distribution system, comprising:

a fiber optic line;

multiple power consuming devices; and

multiple control modules interconnected between the fiber optic line and the power consuming devices, each of the control modules being interconnected between the fiber optic line and one of the power consuming devices, and each of the control

modules being operative to select the respective power consuming device for supplying electrical power thereto in response to one of multiple optical wavelength bands transmitted through the fiber optic line, each of the optical wavelength bands causing one of the control modules to select the respective power consuming device for supplying electrical power thereto,

the power consuming devices being devices having programmed functions, each of the devices performing its respective function in response to electrical power supplied thereto.

41-43. (canceled)

44. (currently amended) A well tool control system for selectively supplying electrical power to multiple electrical power consuming well tools in a subterranean well, the system comprising:

a fiber optic line extending in the well;

multiple control modules interconnected to the fiber optic line , each of the control modules including a WDM drop interconnected between the fiber optic line and a respective one of the well tools; and

multiple opto-electric converters, each of the opto-electric converters being interconnected between a respective one of the control modules and a the respective one of the well tools, and

wherein each of the control modules is responsive to one of multiple optical wavelength bands transmitted through the fiber optic line to cause light to be transmitted to the respective

opto-electric converter and thereby cause electrical power to be supplied to the respective well tool.

45. (canceled)

46. (currently amended) The system according to Claim ~~45~~ 44, wherein each of the WDM drops includes an optical circulator and a Bragg grating interconnected to the fiber optic line.

47. (original) The system according to Claim 44, wherein each of the control modules includes an optical coupler interconnected to the fiber optic line and an optical filter interconnected between the optical coupler and the power consuming device, the optical filter passing a selected one of the optical wavelength bands.

48. (original) The system according to Claim 44, wherein the multiple optical wavelength bands are transmitted singly through the fiber optic line.

49. (original) The system according to Claim 44, wherein the multiple optical wavelength bands are transmitted simultaneously through the fiber optic line.

50. (currently amended) ~~The system according to Claim 49,~~
A well tool control system for selectively supplying electrical

power to multiple electrical power consuming well tools in a subterranean well, the system comprising:

a fiber optic line extending in the well;

multiple control modules interconnected to the fiber optic line; and

multiple opto-electric converters, each of the opto-electric converters being interconnected between a respective one of the control modules and a respective one of the well tools,

wherein each of the control modules is responsive to one of multiple optical wavelength bands transmitted through the fiber optic line to cause light to be transmitted to the respective opto-electric converter and thereby cause electrical power to be supplied to the respective well tool,

wherein the multiple optical wavelength bands are transmitted simultaneously through the fiber optic line, and

further comprising multiple tunable filters and a first optical coupler interconnected to the fiber optic line, the first optical coupler receiving separate optical wavelength bands from the multiple tunable filters.

51. (original) The system according to Claim 50, wherein each of the tunable filters is interconnected between the first optical coupler and a second optical coupler, each of the tunable filters receiving a relatively broad optical wavelength band from the second optical coupler.

52. (original) The system according to Claim 49, further comprising an optical coupler interconnected to the fiber optic line, the optical coupler receiving separate optical wavelength bands from multiple lasers.

53. (currently amended) ~~The system according to Claim 52,~~
A well tool control system for selectively supplying electrical power to multiple electrical power consuming well tools in a subterranean well, the system comprising:

a fiber optic line extending in the well;

multiple control modules interconnected to the fiber optic line; and

multiple opto-electric converters, each of the opto-electric converters being interconnected between a respective one of the control modules and a respective one of the well tools,

wherein each of the control modules is responsive to one of multiple optical wavelength bands transmitted through the fiber optic line to cause light to be transmitted to the respective opto-electric converter and thereby cause electrical power to be supplied to the respective well tool,

wherein the multiple optical wavelength bands are transmitted simultaneously through the fiber optic line,

further comprising an optical coupler interconnected to the fiber optic line, the optical coupler receiving separate optical wavelength bands from multiple lasers, and

wherein at least one of the multiple lasers is a tunable laser.

54. (original) The system according to Claim 44, wherein each of the opto-electric converters is connected to a switch interconnected between at least one power supply and the respective well tool.

55. (original) The system according to Claim 54, wherein the switch is a field effect transistor.

56. (original) The system according to Claim 44, wherein electrical power is supplied to the selected well tools in a manner which transmits data in a selected one of digital and analog form.

57. (currently amended) ~~The system according to Claim 44,~~
A well tool control system for selectively supplying electrical power to multiple electrical power consuming well tools in a subterranean well, the system comprising:

a fiber optic line extending in the well;

multiple control modules interconnected to the fiber optic line; and

multiple opto-electric converters, each of the opto-electric converters being interconnected between a respective one of the control modules and a respective one of the well tools,

wherein each of the control modules is responsive to one of multiple optical wavelength bands transmitted through the fiber

optic line to cause light to be transmitted to the respective
opto-electric converter and thereby cause electrical power to be
supplied to the respective well tool, and

wherein the well tools are data storage devices.

58. (currently amended) ~~The system according to Claim 44,~~
A well tool control system for selectively supplying electrical
power to multiple electrical power consuming well tools in a
subterranean well, the system comprising:

a fiber optic line extending in the well;

multiple control modules interconnected to the fiber optic
line; and

multiple opto-electric converters, each of the opto-
electric converters being interconnected between a respective
one of the control modules and a respective one of the well
tools,

wherein each of the control modules is responsive to one of
multiple optical wavelength bands transmitted through the fiber
optic line to cause light to be transmitted to the respective
opto-electric converter and thereby cause electrical power to be
supplied to the respective well tool, and

wherein the well tools are devices having programmed
functions, each of the devices performing its respective
function in response to electrical power being supplied thereto.

59. (currently amended) ~~The system according to Claim 44,~~
A well tool control system for selectively supplying electrical

power to multiple electrical power consuming well tools in a subterranean well, the system comprising:

a fiber optic line extending in the well;

multiple control modules interconnected to the fiber optic line; and

multiple opto-electric converters, each of the opto-electric converters being interconnected between a respective one of the control modules and a respective one of the well tools,

wherein each of the control modules is responsive to one of multiple optical wavelength bands transmitted through the fiber optic line to cause light to be transmitted to the respective opto-electric converter and thereby cause electrical power to be supplied to the respective well tool, and

further comprising at least one sensor interconnected in the fiber optic line.

60. (original) The system according to Claim 59, wherein the sensor includes an intrinsic fiber Bragg grating.

61. (original) The system according to Claim 59, wherein there are multiple sensors interconnected in the fiber optic line.